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ENVIRONMENTAL PRIORITIES INITIATIVE
PRELIMINARY ASSESSMENT OF
CAROL CABLE COMPANY
PREPARED UNDER

TDD NO. F3-9012-16
EPA DSN PA-2851
FACILITY ID NO. PAD361134083
CONTRACT NO. 68-01-7346

FOR THE
HAZARDOUS SITE CONTROL DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY

JULY 19, 1991

NUS CORPORATION
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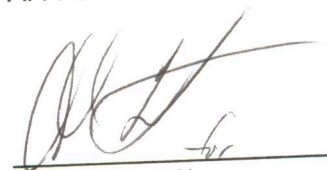

GARTH GLENN
REGIONAL MANAGER, FIT 3

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SECTION 1

1.0 INTRODUCTION

1.1 Authorization

NUS Corporation performed this work under Environmental Protection Agency Contract No. 68-01-7346. This specific report was prepared in accordance with Technical Directive Document No. F3-9012-16 for the Carol Cable Company site, located in Altoona, Blair County, Pennsylvania.

1.2 Scope of Work

NUS FIT 3 was tasked to conduct an Environmental Priorities Initiative (EPI) preliminary assessment of the subject site.

1.3 Summary

The Carol Cable Company property, located in Altoona, Blair County, Pennsylvania, is currently owned by the Carol Cable Company, which is owned by Penn Central. Carol Cable Company has owned the property since 1988. The property is located on four acres of land in a commercial and residential area on the eastern side of Altoona.

The site consists of a 100,000-square-foot manufacturing facility, 2 large parking areas, and a guardhouse. Operations at the facility include the assembly and distribution of battery cables, ignition wires, jumper cables, and other automotive wiring assemblies. Wire used in the assembly process is brought in from outside contractors and incorporated into the different automotive assemblies.

Wastes generated at the plant include solvents used to clean stamp presses and mechanical parts in some machinery. The parts-cleaning process takes place in a parts-cleaning bin located in the maintenance shop. According to plant representatives, only small amounts of wastes are generated at the site. These wastes are stored in a hazardous waste drum storage room that is detached from the main facility. At the time of the FIT 3 visit, no more than 10 gallons of solvent waste were stored at the facility. Three 55-gallon drums were located in the hazardous waste drum storage room. One drum contained five gallons of Markum 320 (a solvent used to clean stamp presses). A second drum contained five gallons of agetene (a solvent used to clean mechanical parts). The third drum contained rags that were used to apply the solvents to the stamp presses and mechanical parts. These rags are collected throughout the plant in five-gallon hazardous waste pails and transported to the hazardous waste drum storage room. Carol Cable Company manifests all waste off site within 90 days of generation. Carol Cable Company operated under the identical EPA identification number as Philips from about December 1988 until January 1990. Carol Cable Company was issued its own identification number at that time.

A lead-casting process is performed at the plant. Lead is melted down and put into molds to produce the lug ends of jumper and battery cables. A torit down-flow cartridge filter is used to collect lead exhaust fumes. The filter is checked and monitored four times a year. According to plant officials, the filter was installed in May 1990 and has not needed replacement.

From 1981 until 1988, the property was owned by Philips ECG, Incorporated, which manufactured radio and television receiving tubes. Wastes generated at the plant were stored in a waste drum storage area on the eastern side of the plant. A solvent waste called synasol was stored in a 3,000-gallon underground storage tank from 1981 until 1982. Sometime in 1982, Philips started using the tank to store waste ethyl alcohol to be recycled and reused by American Products Company. The tank was removed sometime in 1984. According to a plant representative, a spill occurred during excavation. Under a Pennsylvania Department of Environmental Resources (PA DER) directive, several monitoring wells were installed to monitor the migration of any waste material. Currently, no data are available regarding any monitoring wells on the property. Two other underground tanks were located on site. A 10,000-gallon tank was installed in 1975 and contained diesel fuel. This tank was removed in 1988. A 5,000-gallon tank was installed in 1968. This tank, which also contained ethyl alcohol, was removed in 1984. No closure plans or sampling data pertaining to any of these tanks and their removal are currently available.

Little information is available regarding any other wastes generated at the plant during Philips' occupation. According to a Notification of Hazardous Waste Activity filed by Philips on October 27, 1980, wastes generated were characterized as ignitable, corrosive, reactive, and toxic. More specifically, file information suggests that some solvents [paint solvents and waste trichloroethylene (TCE)] and barium compounds were generated at the plant.

Before 1981, the facility was owned by GTE Products Corporation. It is not known how long GTE owned and operated the facility; however, GTE's products and manufacturing processes were identical to Philips ECG, Incorporated.

GTE Products was issued NPDES Permit No. 0772204 in April 1973 for the discharge of non-contact cooling water to Mill Run Stream. In October 1981, Philips ECG, Incorporated was issued NPDES Permit No. PA0111244 for the same type of discharge. NPDES Permit No. PA0111244 was terminated on August 1, 1988, before Carol Cable Company's occupation of the facility. Carol Cable Company has not renewed the permit number. It is not known whether Philips held any other permits.

Hazardous waste facility inspections have been conducted at the site since 1981. A Notice of Violation was issued to Philips on July 7, 1982 for improper hazardous waste shipping procedures, improper manifesting, and inaccurate operations logs. To date, Carol Cable Company has not received any Notices of Violation.

On January 23, 1991, NUS FIT 3 performed an EPI preliminary assessment on the subject site.

Two solid waste management units (SWMUs) have been identified at the facility: the inside hazardous waste drum storage area and the torit down-flow cartridge filter. For a detailed description of these SWMUs, refer to section 4.0.

Residents within the study area rely on public and private water supplies utilizing groundwater and surface water sources for their drinking water supply. The Altoona City Water Authority (ACWA) is the largest supplier in the study area. ACWA utilizes 10 surface water sources and a 3-well field for its water supply. None of the surface water sources receive drainage from the site. The well field, located 1.5 miles north of the site, is used for emergency supply only. This system has not been used for more than two years. ACWA serves approximately 28,000 connections. All those not served by public water are assumed to maintain private domestic wells for their water supply.

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SECTION 2

2.0 THE SITE

2.1 Location

The Carol Cable Company plant in Altoona, Blair County, Pennsylvania is located on the eastern side of Pleasant Valley Boulevard (see figure 2.1, page 2-2). The coordinates of the site are north 40° 29' 10" latitude and west 78° 23' 54" longitude. The site may be located on the United States Geological Survey (U.S.G.S.) Holidaysburg, Pennsylvania quadrangle topographic map by measuring 3.2 inches west and 2.5 inches south of the northeastern corner of the quadrangle.¹

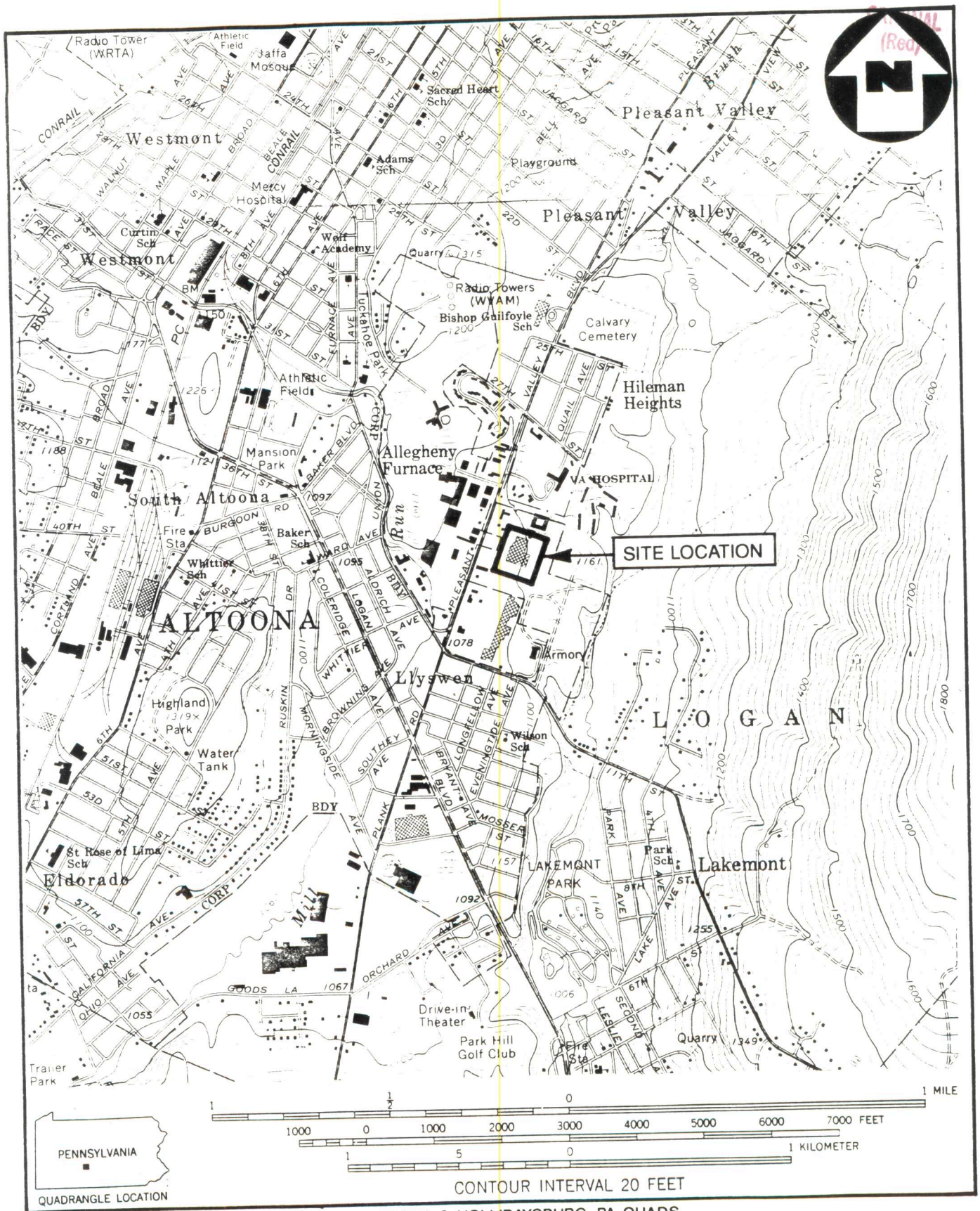
2.2 Site Layout

The site is located on approximately four acres of land. Major features include a 100,000-square-foot main manufacturing building, two paved parking areas adjacent to the southern and western sides of the main building, and a guardhouse. The main building is entirely enclosed by a seven-foot-high chain-link fence topped with barbed wire. A guardhouse is located in the southwestern corner of the lot, within the perimeter of the fence (see figure 2.2, page 2-3).^{2,3}

The main building is divided into two levels (see figures 2.3 and 2.4, pages 2-4 and 2-5). The lower level is utilized for product assembly, and the upper floor is primarily used for packaging and storage of outgoing products. The assembly of booster cables, ignition wires, battery cables, and the storage of raw materials occurs in a 26,000-square-foot area on the first floor. Two five-gallon hazardous waste buckets are found in the ignition assembly area. Offices on the lower level are located along the entire western side of the building.^{2,3}

Three bay areas used for shipments and deliveries are located on the southern side of the building, adjacent to the offices. A staging dock is located 65 feet east of the office areas, between bay nos. 2 and 3. Raw materials are stored in the southern one-third portion of the lower floor, about 15 feet east of the offices. A 32- by 16-foot maintenance shop is located on the eastern wall of the lower level, approximately 115 feet east of the offices. A parts-washing bin is located against the eastern wall of this room.^{2,3}

Adjacent to and south of the maintenance shop is the printing room, approximately 115 feet east of the offices. Product boxes are printed with customer-specific lettering in this room. A five-gallon hazardous waste pail is located in this room. Also, a yellow, flammable storage cabinet containing Markum 320 and agetene is located in this room. A 32- by 64-foot compressor room is situated in the northeastern corner of the building, 115 feet east of the offices. A 32- by 32-foot boiler room is adjacent to and west of the compressor room, located 48 feet east of the offices. Two boilers are found in this room.^{2,3}

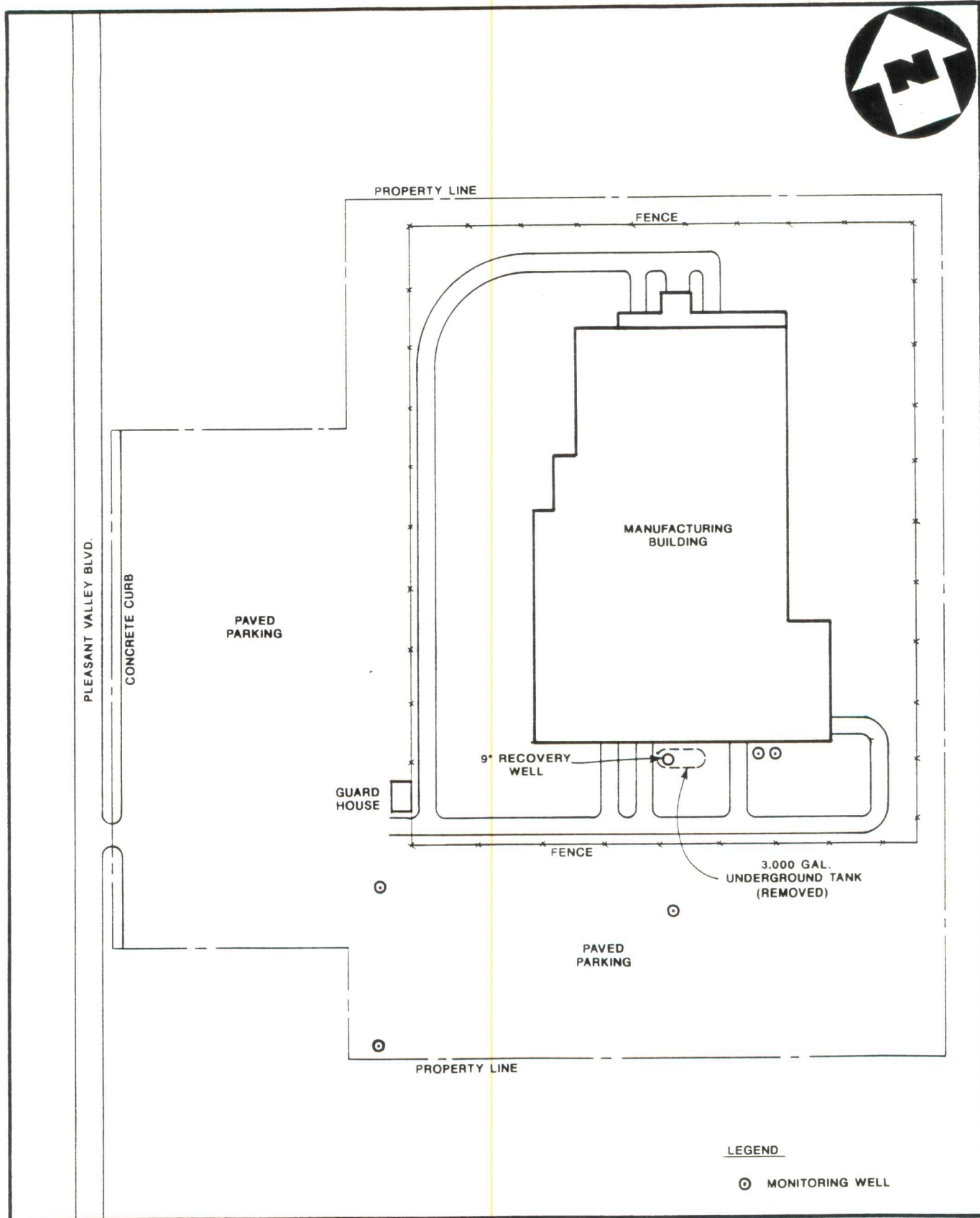


SOURCE: (7.5 MINUTE SERIES) U.S.G.S. ALTOONA & HOLLIDAYSBURG, PA QUADS.

SITE LOCATION MAP
CAROL CABLE CO., ALTOONA, PA
 SCALE 1: 24000

FIGURE 2.1

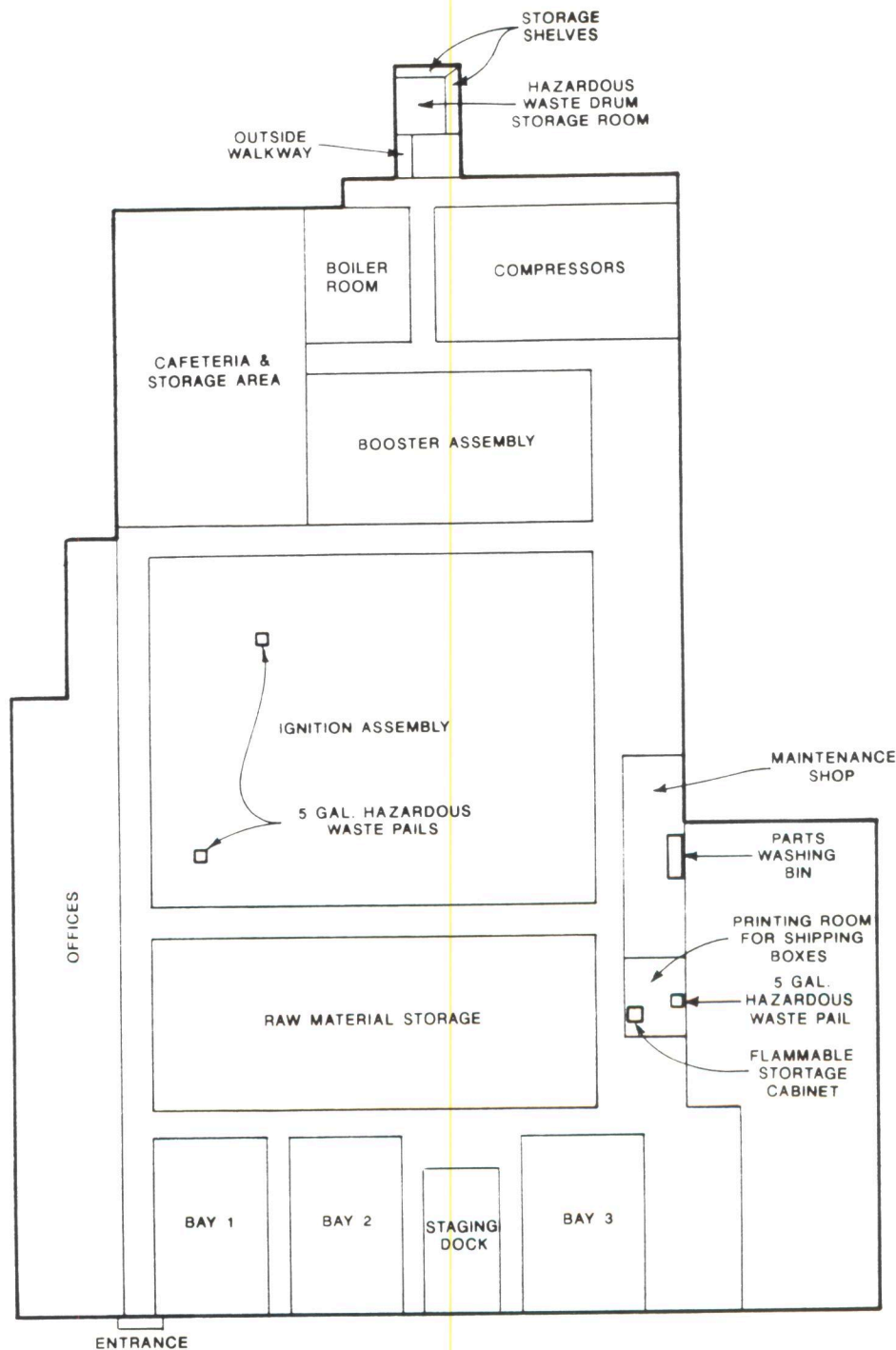
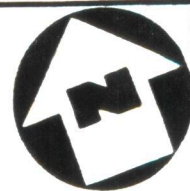




SITE SKETCH
CAROL CABLE CO., ALTOONA, PA
 (NO SCALE)

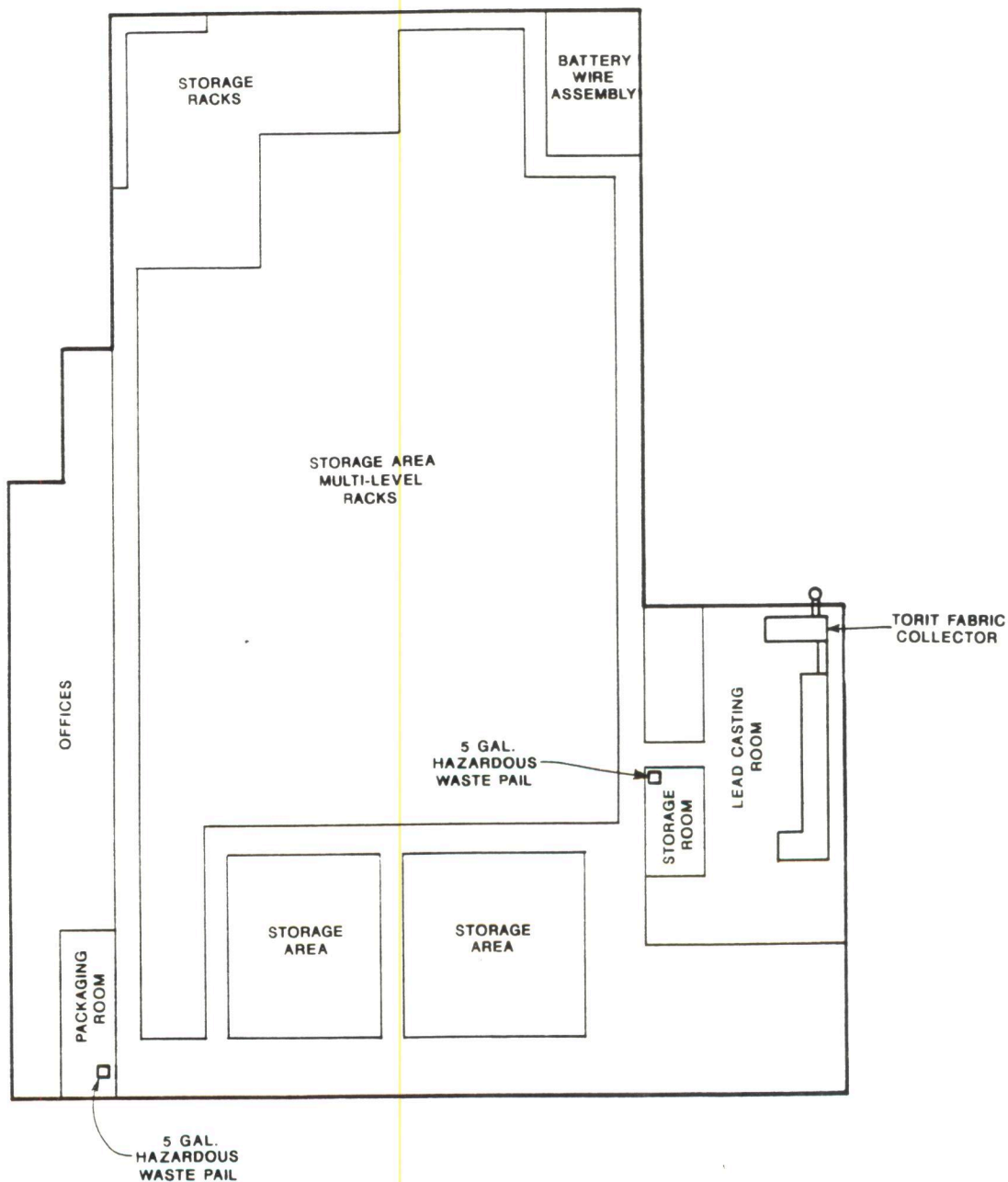
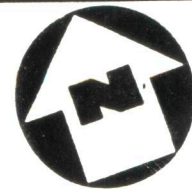
FIGURE 2.2





BUILDING 1st. FLOOR SKETCH
CAROL CABLE CO., ALTOONA, PA
 (NO SCALE)

FIGURE 2.3



BUILDING 2nd FLOOR SKETCH
CAROL CABLE CO., ALTOONA, PA
(NO SCALE)

FIGURE 2.4

A hazardous waste storage room is separated from the main facility by an outdoor walkway that extends off the northern side of the building. The walkway is approximately 20 feet long and terminates in a 15- by 15-foot room. Three 55-gallon drums were found in this room. One drum contained five gallons of Markum 320 waste, a second drum contained five gallons of agetene waste, and the third drum contained solvent-soaked rags used in the parts-cleaning process. Several empty paint cans were located on a roller cart against the western wall of the storage room. The northern and eastern walls were lined with wooden storage racks. The drum storage area was determined to be SWMU no. 1.^{2,3}

The majority of the upper level (approximately 30,000 square feet) is used for the storage of parts and products awaiting shipment. The western wall of the upper level is lined with offices. A 16- by 48-foot packaging room is located adjacent to and south of the offices, against the southern wall. A five-gallon hazardous waste pail is located in this room. Lead-casting operations are performed in an 80- by 32-foot room located 130 feet east of the offices in the southeastern corner of the facility. This room contains the torit fabric collector, an air pollution device permitted by PA DER. This filter system was determined to be SWMU no. 2. A 15- by 27-foot room is adjacent to and west of the lead-casting room. This room is a storage room for terminal parts and supplies. A five-gallon hazardous waste pail is located in this room. A 27- by 35-foot room is situated in the northeastern corner of the upper floor, approximately 100 feet north of the lead-casting room. This room is utilized as a battery wire assembly room.^{2,3}

According to plant officials, six monitoring wells are located on site. Three four-inch wells are located in the parking lot adjacent to the guardhouse. Two other four-inch wells are located adjacent to the southern side of the building. The sixth well observed by FIT 3 personnel is located 75 feet west of the two wells on the southern side of the building. This well has a 9-inch casing and a depth to water of approximately 15 feet. A 3,000-gallon underground storage tank containing waste ethyl alcohol was removed from this area sometime in 1984. This tank was utilized by Philips ECG and was not part of the operation of Carol Cable Company.^{2,3,4,5}

2.3 Ownership History

The property is currently owned by Carol Cable Company, which is owned by Penn Central. The property was sold to Carol Cable Company sometime in 1988. Before 1988, Philips ECG, Incorporated, a North American Philips Company, owned the building. Philips ECG, Incorporated owned the property from January 21, 1981 until 1988. GTE Products Corporation owned the property for an unknown period of time before 1981.²

2.4 Site Use History

The site is used to assemble and distribute battery cables, ignition wires, jumper cables, and other automotive wiring assemblies. The wire used in each of the aforementioned products is manufactured at another plant not associated with the Carol Cable Company. The wire is shipped to the Carol Cable Company, where it is distributed to the different departments to be finished as battery wires, ignition wires, or jumper cables.²

Wastes generated at the plant consist of solvents used to clean stamp presses and mechanical parts in some of the machinery. The cleaning of some mechanical parts takes place in the maintenance shop in a parts-cleaning bin. The parts are washed with a solvent called agetene. The agetene is collected in a bucket under the bin and either reused at a later date or transported to the hazardous waste drum storage room. Markum 320 is primarily used to clean the stamp presses. At the time of the site visit, only 10 gallons of waste were stored at the facility, including five gallons of Markum 320 and five gallons of agetene. Also, one 55-gallon drum containing solvent-soaked rags used to clean the stamp presses and mechanical parts was observed. All wastes generated at the plant are stored in a drum storage room that is detached from the main facility. The wastes are put in 55-gallon drums and removed from the plant within 90 days of their generation.^{2,3}

A lead-casting process is performed at the plant. The lead is melted down and forced into a mold using air pressure. The lead is molded to form the lug ends of jumper cables and battery cables. Any excess lead after assembly is remelted and reused. A torit down-flow cartridge filter is used to collect lead exhaust fumes. The filter is checked and monitored four times a year. According to plant officials, the filter was installed in May 1990 and the cartridge has not needed to be changed.²

The first floor of the facility is primarily used for receiving and assembly, and the second floor is used for the storage of finished products and final shipping.^{2,3}

From 1981 until 1988, the facility was owned and operated by Philips ECG, Incorporated. The facility was used to manufacture radio and television receiving tubes; this did not include television picture tubes. According to file information, a solvent waste called "synasol" was stored in a 3,000-gallon underground storage tank; the use of this solvent is not known. Sometime in 1982, Philips ECG, Incorporated started using the tank to store "paco" solvent, which is composed of 97 percent ethyl alcohol, 1 percent methyl isobutyl ketone, 1 percent ethyl acetate, and 1 percent rubber hydrocarbon solvent and was used to dry parts after they were washed with water. The waste was periodically removed and reused by American Products Company. On March 28, 1985, Philips informed PA DER that it was no longer generating waste ethyl alcohol and that the 3,000-gallon underground storage tank had been removed. The tank was removed sometime in 1984. During removal, the tank developed a leak, and groundwater monitoring wells were installed to determine the quality of groundwater. PA DER terminated the sampling program on July 12, 1984. To date, no other data are available regarding sampling of these wells.^{2,6,7,8,9,10,11}

Two other underground tanks were located on site. A 10,000-gallon storage tank containing diesel fuel was removed in 1988. A 5,000-gallon tank containing ethyl alcohol was removed in 1984.⁵

Before 1981, the facility was owned by GTE Products Corporation. It is not known how long GTE owned and operated the facility; however, its products and manufacturing processes were identical to Philips ECG, Incorporated.⁶

The site use before GTE Products Corporation is not known.

2.5 Permit and Regulatory Action History

In August 1980, GTE Products Corporation submitted a Notification of Hazardous Waste Activity to EPA (for permit-related correspondence, see appendix A). In October 1980, GTE Products Corporation submitted a revised Notification of Hazardous Waste Activity to EPA. In November 1980, GTE Products Corporation filed a Part A Hazardous Waste Permit Application for the subject site. In January 1981, the facility's name was changed to Philips ECG, Incorporated. As a result, the name was revised on the Notification of Hazardous Waste Activity and on the Part A Permit Application. In July 1981, Philips ECG, Incorporated, assigned EPA ID No. PAD004374955, began to operate under interim status to treat, store, and dispose hazardous waste consisting of ignitable, corrosive, and reactive solvent wastes.^{6,12,13,14,15}

On October 17, 1989, Carol Cable Company submitted a Notification of Hazardous Waste Activity to EPA. At that time, Carol Cable Company was reissued the same EPA identification number that GTE Products and Philips ECG maintained. According to site representatives, a second notification was submitted in November 1989. In January 1990, Carol Cable Company began operating as a small-quantity generator of hazardous waste under EPA ID No. PAD361134083. Under this EPA identification number, Carol Cable Company was able to generate, store, and dispose spent nonhalogenated solvent wastes (F005) that have ignitable properties (D001).^{2,16,17}

In April 1973, GTE Products Corporation was issued NPDES Permit No. 0772204 for the discharge of non-contact cooling water to Mill Run Stream. On April 16, 1981, Philips ECG requested the transfer of the aforementioned permit to its files. On May 21, 1981, Philips submitted NPDES Short Form C to PA DER in order to receive a discharge permit. On October 9, 1981, Philips was issued NPDES Permit No. PA0111244 for the discharge of non-contact cooling water to Mill Run Stream.^{18,19,20}

On November 5, 1982, EPA requested Part B of Philips' application for a Hazardous Waste Management Facility Permit. On March 4, 1983, Philips submitted a Notification of Hazardous Waste Activity to PA DER in order to withdraw its application for a permit to store hazardous wastes. At that time, Philips agreed to have a licensed transporter remove its hazardous waste within 90 days of generation. Because Philips was agreeing to store hazardous waste on site for no more than 90 days, the facility chose not to send in Part B of the application.^{21,22}

On September 14, 1983, the facility submitted a Notification of Hazardous Waste Activity to PA DER. This notification was to inform PA DER that Philips wished to store recycled or reclaimed hazardous waste (ethyl alcohol) in a 3,000-gallon underground storage tank. The waste was periodically removed and transported by American Products Company to Kempton, Pennsylvania for eventual recycling and reclamation. On March 28, 1985, Philips informed PA DER that it was no longer generating this waste and that the underground storage tank had been removed.^{9,10}

In May 1986, Philips submitted a request to PA DER to renew its NPDES permit to discharge non-contact cooling water to Mill Run Stream. On February 26, 1987, NPDES Permit No. PA0111244 was reissued to Philips.^{23,24}

On April 9, 1986, Philips notified PA DER that it no longer generated 1,000 kilograms per month of hazardous waste. The facility's monthly average for 1985 was 278 kilograms. As a result, the facility requested a change in status from generator to small-quantity hazardous waste generator. According to EPA, on November 17, 1986, Philips was granted its request.^{25,26}

On June 3, 1988, Philips informed PA DER that it would cease production by August 1, 1988. PA DER stated that, as a result of closure, NPDES Permit No. PA0111244 would be canceled on August 1, 1988. According to file information, Philips ECG, Incorporated ceased its operations on December 16, 1988.^{7,27}

PA DER file information indicates that hazardous waste facility inspections had been conducted since 1981. A Notice of Violation sent to Philips on July 7, 1982 points out several deficiencies. Specific violations include improper hazardous waste shipping procedures, improper manifesting, not keeping an operations log up to date with inspection dates, times, and names of inspectors, and not keeping a list of any repairs or remedial action. Other violations addressed during the inspections included improper personnel training records and proper placards not being offered to hazardous waste transporters (see appendix B).^{28,29}

According to PA DER file information, it appears that NPDES Permit No. PA0111244 was not returned to PA DER when Philips ceased production; therefore, it was transferred to Carol Cable Company when it began operations in 1989. An NPDES compliance inspection was conducted on June 25, 1990. It was observed at that time that the cooling tower was torn down and that there was no longer a discharge to Mill Run Stream. On June 26, 1990, Carol Cable Company requested the permit be revoked. The request was granted on July 12, 1990.^{30,31,32}

On January 3, 1990, PA DER approved the plans for the construction of a fabric collector to eliminate contamination to the air resulting from a lead-casting operation performed at the plant. The system became operational in May 1990. According to plant officials, the air contamination program is inspected four times a year.^{2,33}

According to an official from Philips, the 3,000-gallon underground storage tank used to contain ethyl alcohol was removed sometime in 1984. Two other tanks, a 5,000-gallon ethyl alcohol tank and a 10,000-gallon diesel fuel tank, were removed in 1984 and 1988, respectively. The 3,000-gallon ethyl alcohol tank developed a leak during excavation, and PA DER directed that monitoring wells be installed to monitor groundwater in the area. PA DER was satisfied that no environmental drainage occurred as a result of the spill and authorized a planned shutdown of the wells on July 12, 1984. None of these tanks were used by Carol Cable Company in the operation of its facility.^{2,5}

2.6 Remedial Action to Date

In 1988, Philips terminated operations at the site and moved out. All drums and containers of waste were removed during closure, and the plant was cleaned of all debris and machinery. Before Carol Cable took over the facility, an outside consultant was called in to perform an inspection of the site in order to determine whether any environmental concerns remained. According to Carol Cable Company representatives, no problems were observed.²

According to a Philips ECG representative, the 3,000-gallon underground storage tank used to store waste ethyl alcohol was removed sometime in 1984. According to the representative, the removal of the tank resulted in a spill of some waste material. Per a PA DER directive, several monitoring wells were installed to monitor the groundwater in the area. PA DER authorized a planned shutdown of the wells in July 1984. A 10,000-gallon underground tank used to store diesel fuel was removed in 1988. A 5,000-gallon underground storage tank used to store ethyl alcohol was removed in 1984. No problems occurred during removal of these two tanks. None of the aforementioned tanks were part of Carol Cable Company's operation.^{2,5,11}

According to a PA DER Hazardous Waste Inspection Report, no closure inspection was done at the plant before the departure of Philips ECG, Incorporated. Apparently, PA DER was not aware of Philips' decision to move out of the premises.³⁴

No other remedial activities have taken place at the site.

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SECTION 3

3.0 ENVIRONMENTAL SETTING

3.1 Water Supply

Residents within the study area rely on public and private supplies utilizing groundwater and surface water sources for their water supply.

ACWA, the largest water supplier in the study area, serves residents of Altoona, Bellwood, Tipton, and Juniata. ACWA utilizes nine surface water sources for its water supply. A tenth surface water source, the Pottsgrove Reservoir, has been taken off line because of highway construction. None of the surface water sources receive drainage from the site. One surface water source, Kettle Reservoir, is located within the study area, three miles northeast of the site. A three-well field, located one mile northwest of the site, is used for emergency supplies only; these wells have not been used for over two years. The combined capacity of the emergency wells is two million gallons per day (mgd). Each surface water source serves a dedicated area. Each area is integrated through a complex system of transmission lines and valves. ACWA serves approximately 28,000 connections.^{1,35,36}

The Hollidaysburg Municipal Authority (HMA) serves residents of Hollidaysburg and some surrounding areas. HMA utilizes three surface water sources for its water supply. None of the surface water sources (Brush Mount Reservoir) are located within the study area. The Brush Mount Reservoir is located approximately 2.3 miles southeast of the site. Water from this 0.3-million-gallon reservoir feeds the northeastern part of the system's distribution area and is always isolated from the rest of the network. HMA supplies water to a total of 8,419 people.^{1,36,37,38}

All those not served by public water are assumed to maintain private domestic wells for their water supply. According to public water distribution information, the closest home well is located approximately 2.5 miles southeast of the site. Wells in the area draw from the Devonian age Catskill Formation to the Silurian age Tuscarora Formation. Limestone and sandstone aquifers are the best producers.^{39,40}

3.2 Surface Waters

Surface drainage from the site is expected to flow to the southwest toward Mill Run Stream. Mill Run Stream is a small, perennial stream that is located about 1/4 mile southwest of the Carol Cable Company facility. Three miles south-southwest of the site, Mill Run Stream forms a confluence with the Beaverdam Branch of the Juniata River. Beaverdam Branch is classified as a warm-water fishery and is primarily used for recreational purposes. Beaverdam Branch flows eastwardly for approximately four miles and empties into the Frankstown Branch of the Juniata River. From this confluence, the Juniata River flows eastwardly for approximately 110 miles and empties into the Susquehanna River.^{1,3,41}

Brush Run is a small, perennial stream located upgradient and east of the facility. Brush Run is described as a palustrine, forested wetland with broad-leaved, deciduous trees. It is located approximately 1/4 mile east of the site. No wetlands greater than five acres in size are located within four miles of the subject site. A wetland greater than five acres in size is located at the confluence of the Beaverdam Branch and the Frankstown Branch, approximately 4.1 miles southeast of the site.^{1,42}

3.3 Hydrogeology

The geologic and hydrogeologic conditions in the study area were researched as part of the site investigation. A preliminary literature review was conducted to determine surface and subsurface geologic conditions, soil character, and the status of groundwater transport and storage.

3.3.1 Geology

The Carol Cable Company site is located within the Appalachian Mountain Section of the Valley and Ridge Province. In this intensely folded province, anticlines and synclines generally trend northeast-southwest and produce a succession of narrow, steep-sided ridges and valleys. Rock outcrops typically occur in linear bands parallel to sub-parallel to the fold axes, resistant, well-cemented sandstones and conglomerates forming the ridges. The valleys are underlain by less resistant limestones and shales. Structurally, the site is located on the northwestern limb of a northeast-southwest-trending faulted anticline (see figure 3.1, page 3-3). Rocks beneath the site dip to the northwest, away from the anticlinal axis. The anticlinal axial trace is located about 1.7 miles southeast of the site and strikes north 30 degrees east. The same rock units are exposed on the southeastern limb of the anticline, but these dip to the southeast. The site is underlain by a thick sequence of Paleozoic age clastic and carbonate sedimentary rocks. The rocks are highly folded and fractured, and karst development in the carbonate rocks has been observed in the area. Streams in the area form a sub-dendritic drainage pattern. Relief in the study area ranges from about 980 to 2,540 feet.^{1,39,40,43}

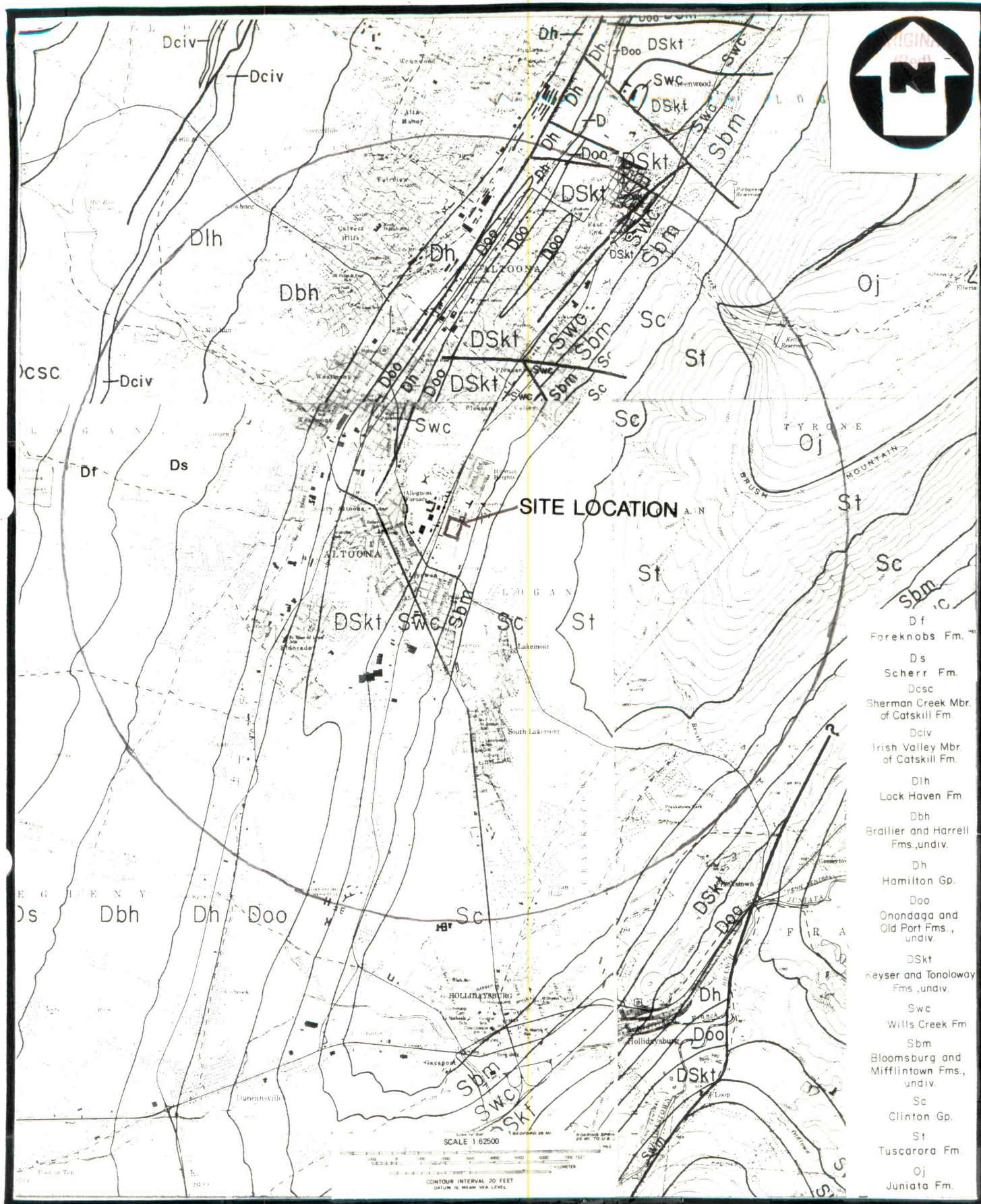


FIGURE 3-1

GEOLOGIC MAP

3-3

CAROL CABLE CO. SITE



The site is directly underlain by the Silurian age Wills Creek Formation. The Wills Creek consists primarily of interbedded olive and greenish-gray shale and clayey limestone, with a few interbeds of fine-grained sandstone. Joints are well developed and highly abundant. The regional thickness of the Wills Creek ranges from 400 to 650 feet.^{39,40,44}

The Silurian age Bloomsburg and Mifflintown Formations (undivided) underlie the Wills Creek at the site and crops out 0.1 mile east of the site. The Bloomsburg Formation is predominantly a grayish-red shale, with some interbeds of light gray sandstone and limestone. The Mifflintown Formation consists primarily of limestone and calcareous shale. Joints in the Mifflintown are well developed and highly abundant, and joints in the Bloomsburg are poorly formed and highly abundant. Reported thicknesses of the Bloomsburg Formation range from 50 to 450 feet, and, for the Mifflintown Formation, the thickness is 200 to 625 feet.^{39,40,44,45}

The Silurian age Clinton Group underlies the Mifflintown Formation and crops out 0.3 mile east of the site. The Clinton Group consists of light gray to light olive-gray shales, with some minor interbedded siltstone and sandstone. The sandstones often are hematitic. Joints are well developed and highly abundant. Reported thicknesses for the Clinton Group range from 575 to 950 feet.^{39,40,44}

The Silurian age Tuscarora Formation underlies the Clinton Group and crops out about one mile east of the site. This formation consists primarily of highly resistant, well-cemented, fine- to coarse-grained sandstones that form prominent ridges throughout the region. Within the study area, this formation forms the crest of Brush Mountain. Joints are moderately well to well developed. The reported thicknesses for this formation in the area range from 400 to 700 feet.^{39,40,44}

The Ordovician age Juniata Formation underlies the Tuscarora Formation and crops out about 2.3 miles northeast of the site. This formation consists primarily of brownish- to grayish-red sandstone, some siltstone, and shale. The sandstone ranges from fine to medium grained and is often crossbedded. Joints are moderately developed and moderately abundant. The reported thicknesses for this formation in the area range from 850 to 1,700 feet.^{39,40,44}

The Devonian - Silurian age Keyser and Tonoloway Formations (undivided) overlie the Wills Creek Formation and crop out about 0.1 mile west of the site. The Keyser and Tonoloway Formations are thin- to thick-bedded, laminated limestones and shaly limestones, with some interbedded shale. Joints in the two formations are moderately developed and moderately to highly abundant. Jointing in the Keyser Formation has been observed approximately 4.8 miles south of the site. There, the Keyser had two well-developed fracture sets, striking north 70 degrees west and north 30 degrees east. The joints were spaced at three feet and showed considerable evidence of solution channeling. In addition, numerous sinkholes had formed along the contact of the Keyser and Tonoloway Formations. Reported regional thicknesses for these formations (considered together) range from 530 to 1,020 feet.^{39,40,44,45}

The Devonian age Onondaga and Old Port Formations (undivided) overlie the Keyser Formation and crop out about 0.8 mile west of the site. The Onondaga and Old Port Formations consist primarily of interbedded dark gray limestones, shaly limestones, and calcareous to non-calcareous shales; the Old Port Formation contains a calcareous quartz sandstone (the Ridgely Member). Joints in the Onondaga are fairly well developed and moderately abundant. Joints in the Old Port are well developed and highly abundant. Reported regional thicknesses for these formations (considered together) range from 50 to 175 feet.^{39,40,44}

The Devonian age Hamilton Group overlies the Onondaga Formation and crops out about one mile west of the site. The Hamilton Group consists of the Marcellus Formation and the Overlying Mahantango Formation. The Mahantango consists of olive-gray fossiliferous siltstones and shales interbedded with light to dark gray, fine- to coarse-grained sandstones. The Marcellus Formation is a thin-bedded, very dark gray to black, fissile shale. Joints in the Hamilton Group are well developed, mostly open, closely spaced, and steeply dipping. The regional thickness of the Hamilton Group ranges from 1,300 to 2,030 feet.^{39,40,44}

The Devonian age Brallier and Harrel Formations (undivided) overlie the Hamilton Group and crop out 1.3 miles west of the site. The Brallier and Harrel Formations are predominantly black and gray shale units, with some interbedded silty shales and siltstones in the younger Brallier Formation. Joints in these formations are highly developed, closely spaced, and somewhat irregular. The maximum regional thickness of these formations (considered together) is approximately 3,000 feet.^{39,40,44}

The Devonian age Scherr Formation overlies the Brallier Formation and crops out approximately 1.8 miles west of the site. The Scherr Formation is composed primarily of olive-gray to greenish-gray, thin- to thick-bedded siltstone and sandstone and brownish-gray to medium gray mudstone and shale. Joints are well developed and closely spaced. The maximum thickness of this unit is 1,900 feet.^{39,40,44}

The Devonian age Foreknobs Formation overlies the Scherr Formation and crops out approximately 2.4 miles west of the site. The Foreknobs Formation is composed of gray conglomerate, sandstone, siltstone, mudstone, and shale. This formation is thin to very thick bedded in layers ranging from 0.5 inch to 10 feet. Joints are well developed and moderately abundant to abundant. The Foreknobs is between 1,500 and 1,600 feet thick regionally.^{39,40,44}

The stratigraphic section mapped as the Foreknobs and Scherr Formations in the Holidaysburg quadrangle is mapped (approximately) as the Lock Haven Formation in the Altoona quadrangle. The Lock Haven Formation is described as predominantly siltstone and argillaceous siltstone (60 percent), sandstone (20 percent), shale (15 percent), and conglomerate (less than 5 percent). The formation is fine grained in the lower part, coarse grained in the medial part, and fine grained in the upper part. Conglomerate forms the top of the formation. Joints are poorly to well developed and have moderate to wide spacing. The Lock Haven is reported to be between 1,900 and 2,000 feet thick, regionally.^{39,40,44}

The Devonian age Irish Valley Member of the Catskill Formation overlies the Lock Haven Formation and crops out about 2.8 miles northwest of the site. This unit is composed of alternating beds of olive-gray sandstone, siltstone, and shale, with red siltstone, mudstone, and shale. Joints are well developed and highly abundant. The maximum thickness of this unit is reported to be 250 feet.^{39,40,44}

The Sherman Creek Member of the Catskill Formation overlies the Irish Valley member and crops out about 2.9 miles northwest of the site. This unit is composed of interbedded grayish-red olive-gray, fine- to medium-grained, silty micaceous sandstone. Joints are reported to be well developed and highly abundant. Statewide, the thickness of this unit is reported to be 1,200 feet.^{40,44}

3.3.2 Soils

The site is mapped as underlain by Urban land - Edom complex, zero to eight percent slopes. This land type consists of areas covered by buildings, roads, and other man-made structures intermingled with areas of Edom soils. This complex consists of about 55 percent urban areas, 20 percent Edom soils, and 25 percent other soils.⁴⁶

Edom soils are deep, well-drained soils. Typically, the surface layer consists of about nine inches of dark grayish-brown silty clay loam. The subsoil is composed of approximately 15 inches of brown silty clay loam and silty clay loam. The substratum consists of about 18 inches of reddish-brown, very shaly silty clay. Edom soils are reported to be relatively to very permeable (1.41×10^{-4} to 1.41×10^{-3} cm/sec) and strongly acid to mildly alkaline (pH, 5.1 to 7.8).⁴⁶

The depth to bedrock beneath the site is unknown. The mean depth to consolidated bedrock in 52 wells located in Allegheny Township is 19 feet; the range is 7 to 40 feet.⁴⁷

3.3.3 Groundwater

Groundwater storage beneath the site occurs in the primary and secondary porosity of the sedimentary rocks of the Wills Creek Formation. Groundwater movement is through the fracture-induced secondary porosity. Fracturing is present in all of the stratigraphic units and provides most of the porosity and permeability present in the units. Because these fractures transcend formational or lithologic boundaries, all the units in the study area are considered to be regionally hydraulically interconnected. Recharge of groundwater in the area occurs through the infiltration of precipitation through the soil and into the fractured bedrock of the host unit and takes place primarily in the topographic highs. Discharge of groundwater occurs into wells or into wetlands or base flow of streams in topographic lows.^{39,40,44}

The Wills Creek Formation yields sufficient groundwater for small to moderate supplies. Jointing provides a low secondary porosity and a low permeability. Regionally, yields for 199 wells range between 1 and 360 gallons per minute (gpm), with a median yield of 15 gpm for domestic wells and 40 gpm for non-domestic wells. Median depths for domestic and non-domestic wells are 100 and 137 feet, respectively. Generally, for this formation, the water-bearing zones are most common at depths shallower than 100 feet, and water quality decreases with depth. The water is very hard and moderately high in dissolved solids.^{40,44}

The depth to groundwater beneath the site is unknown. The median depth to groundwater in 48 wells located in a variety of topographic settings in Allegheny Township is 23 feet; the range is 1 to 100 feet.⁴⁷

Shallow groundwater flow is expected to be to the east, toward Brush Run. Actual groundwater flow direction is not known but is based on the role of streams as discharge points for groundwater and the assumption that the water-table configuration is similar to the surface topography but with less relief.¹

No wetlands greater than five acres in size are located within the four-mile radius. A wetland greater than five acres in size is located at the confluence of the Beaverdam Branch and the Frankstown Branch, approximately 4.1 miles southeast of the site.^{1,42}

3.4 Climate and Meteorology

The climatological data for the area is based on data from State College, Pennsylvania, approximately 30 miles northeast of the site. The average annual temperature of the region is 49.3°F. The average monthly temperatures range from 25.9°F in January to 71.5°F in July. The average annual precipitation is 37.65 inches. The average monthly precipitation ranges from 2.35 inches in February to 3.75 inches in June. The mean evaporation is 30 inches; therefore, the net precipitation is 7.65 inches. The 1-year, 24-hour rainfall for the area is 2.4 inches.⁴⁸

3.5 Land Use

Land use within the three-mile radius of the facility is residential, commercial, and light industrial. The plant is located south and east of the city of Altoona. It is situated in a heavily commercialized section of Pleasant Valley Boulevard. Two shopping malls, several smaller retail establishments, and restaurants are located within 1/4 mile of the facility. Brush Mountain is immediately east of the facility. This mountain is sparsely populated as it rises rapidly to an elevation of 2,500 feet above sea level.^{1,3}

3.6 Population Distribution

A routine house count was made for the one-, two-, and three-mile radii surrounding the site. Also taken into account were the known populations of the surrounding communities. The calculated population is as follows:¹

0 to 1/4 mile =	25
1/4 to 1/2 mile =	2,568
1/2 to 1 mile =	5,389
1 to 2 miles =	15,411
2 to 3 miles =	22,003
3 to 4 miles =	20,359

In addition, 215 employees work at the Carol Cable Company facility daily.

3.7 Critical Environments

Two federally listed endangered birds are expected to be found as transient species in the project area. They are the bald eagle (Haliaeetus leucocephalus) and the peregrine falcon (Falco peregrinus). There is no listed critical habitat for these species in the project area.⁴⁹

The closest wetland is a palustrine, forested wetland, with broad-leaved deciduous trees, located 1/4 mile east of the site. No wetlands greater than five acres in size are located within a four-mile radius of the site. A wetland greater than five acres in size is located at the confluence of the Beaverdam Branch and the Frankstown Branch, approximately 4.1 miles southeast of the site.^{1,42}

ORIGINAL
(red)

SECTION 4

4.0 WASTE TYPES AND QUANTITIES

According to a Notification of Hazardous Waste Activity submitted by Carol Cable Company in 1989, wastes generated at the facility are listed under two classifications: D001 (ignitable) and F005 (cleaning solvents). These classifications may not represent all wastes generated at the plant. Specific wastes generated at the facility include solvents used to clean stamp presses and machinery. At the time of the site visit, 10 gallons of waste were stored at the facility, including 5 gallons of Markum 320 (a solvent used to clean stamps and stamp presses) and 5 gallons of agetene (a solvent used to clean mechanical parts). The wastes are stored in 55-gallon drums and removed from the plant within 90 days. According to plant representatives, no waste has yet to be transported off site because such a small quantity of waste is generated.^{2,16}

A lead-casting process is performed at the plant. Lead exhaust fumes are collected by a torit down-flow cartridge filter. According to plant representatives, the filter is checked and monitored four times a year. The filter has not been changed since installation took place in May 1990.²

From 1981 until 1988, the facility was owned and operated by Philips ECG, Incorporated. According to a Part A Permit Application filed by Philips in 1980, wastes generated were listed under five classifications: F001, F002, F003, and F005 (spent nonhalogenated solvents) and D005 (barium wastes). Wastes were identified to be ignitable, reactive, corrosive, and toxic. Wastes generated at the plant were stored under two process codes: S01 (drums and barrels) and S02 (tanks). The wastes listed above may not represent all on-site wastes.^{2,14}

From 1981 until 1984, Philips generated approximately 77 kg of TCE per month, 291 kg of barium per month, and 815 kg of paint wastes (alcohol) per month. Several different transporters were used. The EPA transporter identifications numbers were NYD043815703, MID060975844, PAD098732118, and PAR000060003 (see appendix C).⁵⁰

Philips used a 3,000-gallon underground storage tank to store waste ethyl alcohol from September 1982 until March 1984. File information suggests that approximately 1,659 kg per month were generated between September 1982 and March 1984. A 10,000-gallon underground tank was used to store diesel fuel. A 5,000-gallon underground storage tank contained ethyl alcohol. All tanks were removed between 1984 and 1988. No information is available regarding exact dates or transporters of the waste off site.^{5,50}

4.1 Solid Waste Management Units

Two SWMUs have been identified for the site: the inside drum storage area and the torit down-flow cartridge filter.^{2,3}

4.1.1 SWMU No. 1

Inside Drum Storage Area

The inside drum storage area is located in a small room that is detached from the main lower level of the building. The room is located on the northern side of the building. The drum storage room is about 15 feet long by 15 feet wide. It has a concrete floor and concrete-block walls. There is no floor drain in the room. The drums are sitting directly on the concrete floor. All hazardous waste generated at the plant is stored in this area until removal from the plant. At the time of the site visit, only three drums were in the room. The northern and eastern walls of the room are lined with wooden storage racks. A roller cart with several old one-gallon paint cans was located against the western wall of the room.^{2,3}

Date of Start-up

Available information indicates that utilization of this area began in 1990.²

Date of Closure

The area is currently active and, according to plant officials, there are no plans for closure.²

Wastes Managed

All hazardous wastes generated at the plant since 1990, with the exception of lead exhaust fumes from the lead-casting process, are stored in this area. Currently, those wastes include five gallons of Markum 320 (a solvent used to clean stamps and stamp presses), five gallons of agetene (a solvent used to clean mechanical parts), and some paper towels and rags soaked with the aforementioned solvents. Wastes in this area are listed under two classification codes: D001 and F005.^{2,16}

Release Controls

All wastes in this area are contained in sealed 55-gallon drums. The drums are upright and sitting on the concrete floor. There are no floor drains in the room. All four walls are constructed of concrete block material.³

History of Releases

No releases from this area have been reported. No evidence of releases or spills was observed during the site visit.^{2,3}

4.1.2 SWMU No. 2

Torit Down-Flow Cartridge Filter

A lead-casting operation is performed at the plant. Lead exhaust fumes are collected by a torit down-flow cartridge filter. The lead-casting room is located on the upper level of the facility in the southeastern corner. The filter is inspected four times a year in order to identify the concentration of lead built. To date, the filter has not been replaced.²

Date of Start-up

Available information indicates that utilization of this filter began in May 1990.²

Date of Closure

This filter is currently being used and, according to plant representatives, there are no plans for closure.²

Wastes Managed

The torit down-flow cartridge filter collects lead fumes exhausted from the lead-casting operations performed at the plant.²

Release Controls

The torit down-flow cartridge filter used by Carol Cable Company is inspected four times a year in order to determine the concentration of lead built up to that point. To date, the filter has not been cleaned or replaced.²

History of Releases

No releases have been reported in this area. No evidence of spills or releases was observed during the site visit.^{2,3}

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SECTION 5

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5.0 FIELD TRIP REPORT

5.1 Summary

On Wednesday, January 23, 1991, NUS FIT 3 personnel Steven Sottung and Shari Harris-Dunning conducted an EPI preliminary assessment at the Carol Cable Company located in Altoona, Blair County, Pennsylvania. The team was granted access by Frank Mathieus, the health and safety director for Carol Cable Company. Michael Union, of PA DER, accompanied the FIT during the site visit. The weather during the inspection was overcast and cold, with a temperature of about 30°F. Photographs were taken at the site (see figure 5.1, page 5-5, and the photograph log, section 5.4).

5.2 Persons Contacted

5.2.1 Prior to Field Trip

Helen Berry
Plant Manager
Carol Cable Company
3101 Pleasant Valley Boulevard
Altoona, PA 16603
(814) 944-5002

Michael Union
PA DER
Bureau of Waste management
615 Howard Avenue
Altoona, PA 16601
(814) 946-7290

Frank Mathieus
Health and Safety Director
Carol Cable Company
3101 Pleasant Valley Boulevard
Altoona, PA 16603
(814) 944-5002

Donna Santiago
U.S. EPA
841 Chestnut Building
Ninth and Chestnut Streets
Philadelphia, PA 19107
(215) 597-1105

5.2.2 At the Site

Helen Berry
Plant Manager
Carol Cable Company
3101 Pleasant Valley Boulevard
Altoona, PA 16603
(814) 944-5002

Jeanne Anne Mitchell
Personnel Director
Carol Cable Company
3101 Pleasant Valley Boulevard
Altoona, PA 16603
(814) 944-5002

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5.2.2 At the Site (continued)

Victor Jacobs
Plant Maintenance Manager
Carol Cable Company
3101 Pleasant Valley Boulevard
Altoona, PA 16603
(814) 944-5002

James Hoover
Hazardous Waste Manager
Carol Cable Company
3101 Pleasant Valley Boulevard
Altoona, PA 16603
(814) 944-5002

Michael Union
PA DER
Bureau of Waste management
615 Howard Avenue
Altoona, PA 16601
(814) 946-7290

5.2.3 Water Supply Well Information

No off-site domestic wells were found within 1/2 mile of the site.

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(Red)

5.3 Site Observations

- The background OVM reading was 0.6 ppm. A reading of 4 ppm was recorded on the lower level of the facility, in the vicinity of an ink machine.
- The mini-alert was set on the X1 position; no readings above background were recorded.
- The site was located on approximately four acres of land in Altoona, Blair County, Pennsylvania.
- Excluding the main parking area, the site was completely enclosed by a seven-foot chain-link fence topped with barbed wire.
- Access to the plant was controlled by a guard house.
- A 100,000-square-foot manufacturing building that housed offices and all production facilities was located on site.
- The grounds sloped away from the building. Surface water flowed into the surrounding parking lots and drained away from the site, primarily to the west and southwest.
- Storm water drains located throughout the facility and around the site carried water to the sanitary sewer.
- Two large parking areas were located on the western and southern sides of the facility.
- The offices were located on the western side of the lower and upper levels of the building.
- The upper level was used primarily for storage of manufactured items. Several rows of five-tier storage racks lined the floor. A small room in the northeastern corner of the upper level was used for strapping wires together. Packaging was also done on the upper level.
- The lower level was used for the manufacture of battery cables, ignition cables, and booster cables.

- Lead casting is done in a room in the southeastern corner of the upper level.
- Fumes from the lead-casting procedure are collected in a torit filtration unit located adjacent to the lead-casting unit.
- Yellow, five-gallon hazardous waste pails were located in two areas on the upper floor and three locations on the lower floor.
- A separate room that was detached from the main building was used as a drum storage area. At the time of the visit, three drums were located in the room. Wastes that were allegedly contained in the drums included five gallons of Markum 320 (a cleaning solvent), five gallons of agetene (a mechanical parts cleaner), and rags saturated with the aforementioned cleaners.
- A mobile cart with about 30 old paint cans containing various amounts of paint was located against the western wall of the room.
- The northern and eastern walls of the drum storage area were lined with storage racks.
- The area where a 3,000-gallon underground storage tank was removed was grass covered. This area was located on the southern side of the building.
- A nine-inch recovery well was located adjacent to the removal area.
- The depth to water in the well was 15 feet. No readings above background were recorded in or around the well.
- A second monitoring well was located in the parking lot, adjacent to and about 80 feet southwest of the guard house. This well could not be opened.
- The plant was located in a heavily commercialized area. An armory was located north of the site, and a shopping mall was located south of the site. Several car dealerships and fast-food restaurants were within one mile of the site.

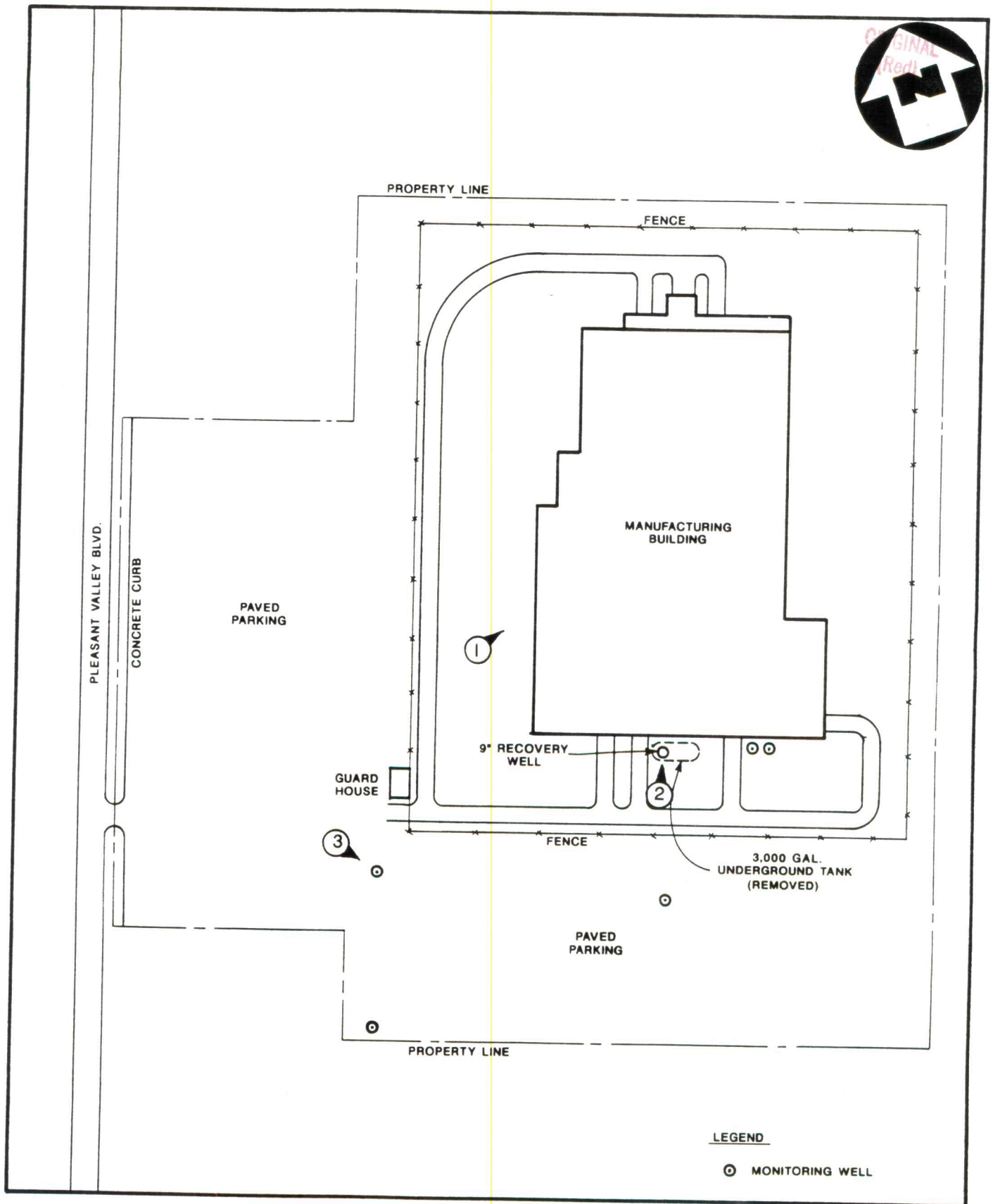


PHOTO LOCATION MAP
CAROL CABLE CO., ALTOONA, PA
(NO SCALE)

FIGURE 5.1

